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HEDGE TRIMMERS

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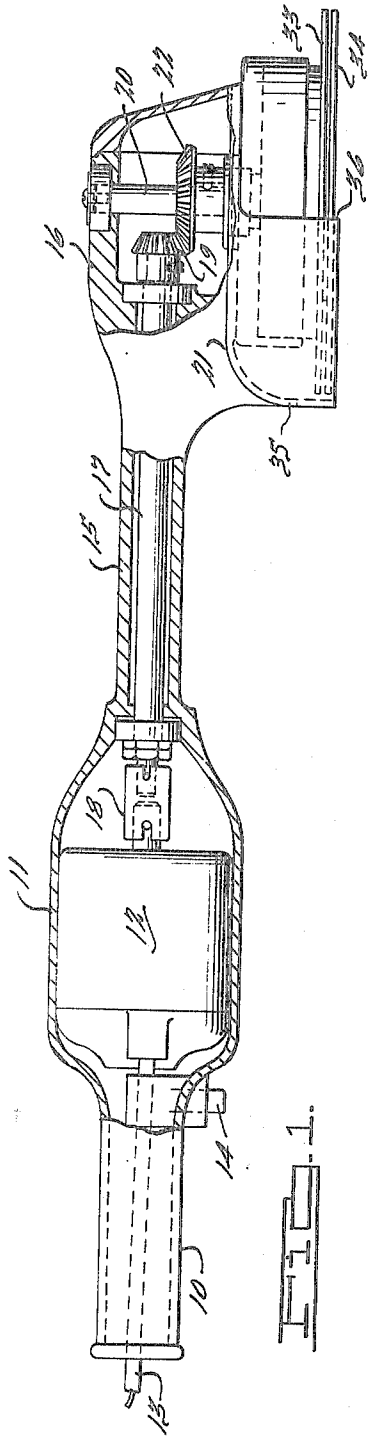


Fig. 1.

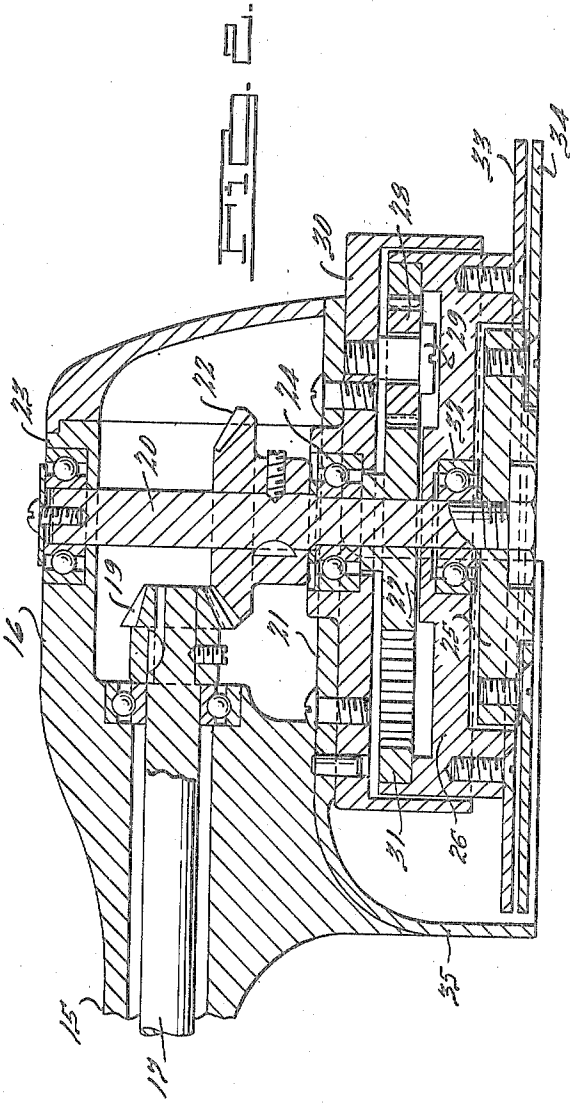


Fig. 2.

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HEDGE TRIMMERS

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3 Claims. (Cl. 30—206)

This invention relates to clippers, and more particularly to a new and improved type of hedge trimmer for use in the trimming of hedges, or the like. In the place of the common scissor action of many hedge trimmers, or the reciprocating bar action cutters also used, I herein disclose a new and improved type of hedge trimmer wherein the shearing action is carried out through a plurality of rotating blades in different planes, each set of blades in each plane revolving in opposite directions.

The above and other objects of the invention will appear more fully from the following more detailed description, and from the drawing, wherein:

Fig. 1 is a side elevation of the device, partly in section; and

Fig. 2 is an enlargement, in section, of the cutting head.

Referring now to the drawing, the numeral **10** designates a handle member which has built integrally therewith a housing member **11** adapted to receive and hold an electric motor **12**. An electric lead line **13**, which leads to a source of power, not shown, is threaded through the handle member to the motor, and a standard switch member **14** is provided for switching the motor on or off. A hand-grip portion **15** is also built integrally with housing member **11**, terminating at one end thereof as a cutting head housing **16**, the head, hand-grip portion, motor housing and handle are cast in two separate longitudinal sections and bolted together to form a single unitary structure. Hand-grip portion **15** has rotatably journaled therein a shaft **17**, the same having one end thereof connected to a coupling member **18** for coupling the motor armature to said shaft **17**, and a bevel gear **19** keyed on the other end of shaft **17**. A vertical shaft **20** is rotatably journaled in the top of cutting head casting **16** and the bottom **21** of said head, between bearing members **23**, **24**. A bevel gear **22** is keyed to shaft **20** and is so located on said shaft **20** that it is in mesh with gear **19**.

The shearing mechanism comprises two casting members, a lower casting member **25**, which is bolted to the bottom of shaft **20**, and an upper casting member **26**, which is rotatably supported upon shaft **20** by means of a bevel gear **27** keyed thereto, and has in horizontal alignment, and in mesh therewith, three spur pinion gears **28** rotatably mounted upon stub shafts **29**, which in turn are secured to a plate member **30** secured in turn to the bottom **21** of cutting head **16**. An internally toothed ring gear **31** is carried in a recess formed in the top of upper casting **26**, the same meshing at all times with the three spur pinions **28**. A bearing member **32** acts as a spacer and support between the upper and lower casting members and allows the upper casting member to rotate thereon and be supported thereby. A plurality of shearing blades **33** are spaced about and carried by the bottom edge of the upper casting, and a similar number of blades **34** are spaced about and carried by the bottom edge of the lower casting, said upper and lower blades being alternated so that the upper and lower

shearing blades are not in vertical alignment. The cutting head housing **16** is so formed that the rear portion of same is enclosed, as at **35**, and the leading or front portion of same is open, as at **36**.

The manner in which the trimmer operates is as follows:

Lead line **13** may be plugged in to any convenient electrical outlet and a long electric cord is provided so that the trimmer may be carried from place to place. To operate, switch **14** is pressed, which in turn starts electric motor **12** and rotates drive shaft **17**, which is coupled thereto. Shaft **17**, having bevel gear **18** keyed thereto, rotates, which, in turn, rotates bevel gear **22** keyed to vertical driven shaft **20**. As driven shaft **20** rotates in a clockwise direction, lower casting **25**, which is keyed thereto, also rotates in a clockwise direction carrying shearing blades **34** therewith. Bevel gear **27** is also keyed to shaft **20** and rotates therewith, said gear meshing with the three spur pinion gears **28** which are rotatably supported upon stub shafts **29** secured to plate **30**, and the pinion gears **28** also mesh in turn with internally toothed ring gear **31** which is embedded in the top of casting **26**, and all gears rotate in the same plane. As gear **27** turns in a clockwise direction with shaft **20**, the spur pinions **28** rotate and turn ring gear **31** supported within upper casting **26** in a contra-clockwise direction carrying shearing blades **33** therewith.

As blades **33** and **34** pass over each other, at high speed, complete shearing action is provided and a hedge, or the like, is quickly trimmed to the desired height. The cutting head casting is so designed that the front or leading portion of the head is cut away to allow the top of the hedge to be cut and to be thrust forward of the cutting blades and not back against the user. The casting members, which in turn carry the shearing blades that turn in opposite directions, are fully enclosed to keep them free from foreign matter and the drive and driven shafts are also fully enclosed for the same purpose. The trimmer is built in two parts so that it may be quickly taken apart to oil or replace a motor or other parts. The shearing blades may be quickly detached from their castings for resharpening or replacement, and the entire device is light, and easy to handle.

While I have described and illustrated a satisfactory device that has proven highly successful in practical operation, it will be understood that the invention is not limited to specific constructional details shown and described, but that many changes, variations and modifications may be resorted to without departing from the principles of my invention.

I claim:

1. A hedge trimmer of the class described comprising a cutting head housing having a top and bottom, a handle member built integrally therewith, a drive shaft rotatably mounted in said handle having a gear member mounted on one end thereof, power means for rotating said shaft located in said handle, a driven shaft journaled in said cutting head housing, a gear member carried by said driven shaft adapted to mesh with said gear on one end of said drive shaft, upper and lower cutting members having radially extending shearing blades carried thereby, and means for rotating said cutting members in opposite directions comprising a lower cutting member supported on the lower end of said driven shaft and having radially extending shearing blades carried thereby, an upper cutting member having radially extending shearing blades carried thereby, supported by a bearing member on said driven shaft, a spur gear secured to said driven shaft, spur pinion gears rotatably supported from the bottom of said cutting head housing and an internally toothed ring gear supported within the top of said upper

cutting member, said gear train being in mesh to provide rotation in an opposite direction from the lower cutting member.

2. A hedge trimmer comprising, in combination a cutting head housing, having a top and bottom, a handle member extending from said housing, a drive shaft rotatably mounted in said handle having a gear member on one end thereof, power means for rotating said shaft also located in said handle, a driven shaft journaled in said cutting head housing, a gear member secured to said driven shaft adapted to mesh with said gear on one end of said drive shaft, upper and lower cutting members is superimposed juxtaposition and having radially extending shearing blades spaced about the outer periphery of said cutting members, the lower of said rotating cutting members being secured directly to said driven shaft, and the upper of said rotating cutting members having an internally toothed ring gear carried in the top portion thereof, a spur gear secured to said driven shaft, and spur pinions rotatably supported upon stub shafts in the bottom of said cutting head housing, all of said

gears being in mesh with each other so that as the driven shaft is rotated the lower cutting member and shearing blades turn in one direction and the upper cutting member and shearing blades turn in the opposite direction creating a shearing action between said blades.

3. A hedge trimmer as set forth in claim 2 in which the radially extending shearing blades on said upper and lower cutting members are so positioned that the blades on the upper cutting member are not in vertical alignment with the blades on the lower cutting member.

References Cited in the file of this patent

UNITED STATES PATENTS

2,244,683	Fisher	June 10, 1941
2,245,821	Poynter	June 17, 1941
2,443,027	Dishmaker	June 8, 1948

FOREIGN PATENTS

405,732	Great Britain	Feb. 15, 1934